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Finding the Hidden Driveways: Observing Students at Work

by Simon Hole

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My brother and I spent part of my 17th summer counting dogs for the township we lived in. At 15 cents per pooch, taking dog census was hardly going to make us rich, but it kept us busy and we could set our own schedule, which is why it was mid-August before we started driving down the last country road of the township.

I maneuvered Dad's '63 Chevy around a particularly sharp corner. The late afternoon sun was in my eyes and, concentrating on the road, we passed a driveway before we knew it was there. The contrast of a rusty mailbox against the deep green of the surrounding bushes caught my eye and I braked sharply. Backing up, praying that another car wouldn't come careening around the curve, I nearly said to Dave, "Let's skip this one."

We pulled into the driveway of one of the more decrepit farm houses in the area. Meeting us halfway, the farmer stood in the small patch of mown lawn and listened to our question. "Hi. We're taking dog census for the township. Got any dogs?" A smile spread across his face and he asked incredulously, "Have I got any dogs?" Raising his fingers to his mouth, he gave a short, piercing whistle.

Our attention was immediately redirected to a small stand of apple trees about 50 yards behind the house. What sounded like a stampede was headed our way, but we could see nothing. Suddenly a small, white and black, mixed breed terrier burst from the tall grasses, stopping at its master's feet. It took a moment for Dave and I to realize that the sound of the stampede hadn't stopped, although the pitch had changed from a bass drum to tom toms. Looking again to the field, we watched in wonder as 11 miniature versions of the first dog broke out into the lawn and ran yapping after their mother.

Little balls of fur, the pups had almost identical markings; nearly white bodies with black faces and a white slash along their noses. Watching them roll over each other trying to get to their mother, we couldn't help but laugh. When we finally got control of ourselves, the farmer smiled at us and repeated, "Have I got any dogs? Would you like a few?"

Mom wasn't very happy with our decision to take the farmer up on his offer. She insisted that we take it back immediately, but we talked her into waiting until the next morning. By then it was too late, and Shan was a part of our family for the next 13 years.

I've been thinking about Shan lately and how easy it would have been to have missed that driveway all together. And I'm thinking about my teaching, how often it resembles that '63 Chevy, moving just a little too fast.

Counting to 100

The paper was lying upside down in the middle of the workspace, four desks pushed together to form a table. When he saw that I wasn't going to give any more verbal directions, Jerry picked it up and began to read to himself. Debbie, who was sitting next to him, reached over, took the paper out of his hands, and placed it on the table where the whole group could see it. "Come on, Jerry, we're supposed to work as a team!" Peter and Betsy, seated across from the others, twisted around in their seats so they could read the upside down directions.

How many ways can you count and hit 100 exactly, starting from zero?

After a few moments of silence, Debbie picked up her pencil and took out a sheet of blank paper. "Well, we know you can count by 1's and reach 100." Without looking at her teammates she proceeded to write the numbers 1,2,3,4.... Jerry stopped her before she reached 20, saying "Hey, it doesn't say we have to write them all. We agree that 1's work. So will 2's. Write that down." Debbie dutifully left off on the 1's list and started writing 2, 4, 6, 8. She stopped there and leaned toward Jerry. "How about 5's? That'll work, won't it?"

For the next five minutes or so, Jerry and Debbie added items to the group list. One of them would suggest a counting sequence and the other would either confirm or dispute it. In the case of a dispute, the two of them would talk about it for a moment and decide whether or not this particular number would work. If there was no dispute, the number would be added to the list. At first Debbie wrote down the first three or four numbers in each counting sequence. Soon she was just writing down the actual counting number.

When they began, Betsy and Peter were leaning forward in their chairs, listening intently and nodding their heads at the suggestions of their teammates. At one point Betsy quietly suggested that they try 4's, and when Jerry and Debbie didn't hear her, she leaned back in her chair. She spent the rest of the counting session reading the paper with the directions on it. Although he didn't offer any suggestions, Peter remained passively engaged in the work. So he heard Jerry suggest that counting by 45's would work, and when Denise nodded and wrote it down, he scrunched up his face in thought. After a moment, he spoke up quietly. "Wait a second. I don't think that 45 will work." By this time, Debbie and Jerry were discussing whether or not counting by 100's was a valid answer and they either didn't hear Peter or chose to ignore him.

A moment went by before Peter spoke again, this time a bit more loudly. "Hey! Are you sure 45 belongs on the list?" This time both Jerry and Debbie stopped and looked at Peter briefly before they continued with their discussion. At this point Peter appeared puzzled. Using his finger as a pencil, he 'wrote' on his desk--- $45+45$ and worked out the answer, 90. When he was certain that he was right, he reached across the table and put his finger on the number 45. This got the attention of his teammates. "Look. If you are counting by 45's, you get to 90 and another 45 will

take you way past 100. It won't work." Jerry thought about it and said to Debbie, "Right. Better erase 45."

Peter smiled to himself, leaned back in his chair and let the other two finish the assignment.

Reflections on Observations

The session described above took place in my fourth grade classroom on the first day of school in September 1993. The lack of a teacher voice throughout the lesson reflects a deliberate attempt on my part to assume a new role---teacher as observer. Not that I had never observed my students working. Throughout my eighteen years of teaching I had become quite adept at watching my class for cues that they weren't 'getting it' and could adjust my lessons accordingly. But this kind of observation was different. I was deliberately staying out of the picture. In fact, my last words to the group before Jerry picked up the paper were, "My role will be to observe you work. Try to ignore me---pretend that I'm across the room working with some other students." When they looked my way during the early part of the session, I kept my eyes on the clipboard where I was taking notes. By the time Peter started raising the issue of whether or not 45 would work, they had pretty much forgotten that I was sitting just outside their workspace.

This notion of teacher as observer had been on my mind for several years, but really came together during the summer preceding the opening of school. I had been reading a lot of material concerning the constructivist point of view; Duckworth and Perkins and a small but powerful book published by ASCD called *The Case for Constructivist Classrooms*. It seemed to me that they were all saying that to create an effective learning environment we have to take the time to find out what the kids are thinking; to see where their heads are in a way that no pretest can ever tell us. Later in the year I would be introduced to Seymour Sarason's book, *Letters to a SERIOUS Education President*, which summarized the others by saying that "...all reform efforts are doomed to fail until teachers learn to come to know their students well on an intellectual level... come to know what and how the students are thinking."

A second factor that influenced my use of classroom observation was a summer 91 at Brown University being trained as a Re:Learning National Faculty member. One of the professional development activities provided by the Coalition of Essential Schools, this program provided me with the skills needed to reflect on my own teaching practice as well as how to observe other teachers at work and provide them with feedback. By September of 1993 I had spent a good deal of time consulting with teachers in a variety of settings: a rural New Hampshire farming community, a Massachusetts fishing port, Philadelphia. I hope I've helped these teachers think differently about how they work with their students and colleagues. I know it's helped me. I've been exposed to the ways other teachers think about and implement alternative assessment, integrated curriculum and other aspects of their practice. I've brought new ideas back to my classroom and my team, and we're better teachers for it. However, the key thing that I've gained from my work as a consultant is an appreciation for the power of observation.

When I'm working with adults; my teammates, other members of the staff of my school, or while consulting, there is always at least some amount of time to sit back and observe; to be reflective during the work. That's not usually true when working with students, especially not when I'm in

full-tilt, teacher-centered mode. With 20-30 students, all wanting something, doing something, needing something, I get so busy teaching that it is nearly impossible to be thinking at the same time. One of my consulting colleagues, Chris Louth, put this issue on the table by saying, "I've sensed for several years that one of the greatest beneficiaries of observing another class is the observer, because observation fosters reflection on the spot, something that can't happen while one is teaching."

Both my reading and my work as a consultant caused me think deeply about Chris's comment. Why can't observation be one strategy that teachers can use to know their students? After discussing this idea with my teammates we decided to try an experiment as soon as school opened. We would divide each of our classes into five groups of 4-5 students. Four of the groups would be involved in independent activities. The fifth group would be observed for 15 minutes as they worked through the counting to 100 activity. At the end of the 15 minutes we would each shift to another group so that by the end of the day we would have observed all 65 students. At dismissal we would meet in Letty's room and compare our results.

Several things stood out in my observations. Each of the five teams I observed had one student who never offered a solution. (Technically, Betsy did offer an idea, but because she wasn't heard and didn't push it the way Peter did, hers wasn't considered.) Only one person from one of the teams tried to draw out the quiet one, asking, "Mary, do you have any ideas?" Also, most of the groups had one person that seemed to be accepted as an authority, although I don't know how the group conferred that status. It could be from previous experience, but these were kids that had come from eight different third grade classrooms. They couldn't all know Carl, for instance. It wasn't a gender issue as a little over half of the "experts" were female. Was there some quality that these "leaders" have that the other kids were picking up on?

It didn't seem to matter that the experts weren't always right. In one group Chet suggested they try counting by 15. Carl thought about it for a minute and said it wouldn't work. Chet pushed the point but gave in after a brief explanation by Carl, one that made no logical sense to me. Then Chet suggested 3's and when Carl said no, Chet made a face, but gave no argument. Finally, Chet said, "How about 4's?" and again Carl said no, with no apparent thought. Of course, 4's do work, but by this time Chet was blindly accepting Carl's authority.

There were other things that I saw, some sort of embryonic problem solving strategies that didn't get carried through very far. Someone in the first group looked at how 6's work: leads to 12, then 24: They skipped 18, but that seemed okay. My notes say that she was trying to make a rule of some sort, although I don't know exactly how that was working. In a similar vein, Josie said, "4 will get you to 20, and we know that 20 will work, so 4 must work." She's right, and I wanted to ask her if that is a special case, or if that "rule" can be stated and will always work. And finally, Billy mumbled, "Wait a minute, there's some kind of a pattern here." At that point he basically withdrew from the group, trying unsuccessfully to find the pattern.

The three of us found many commonalities in our observations when we met at the end of the day. Some of them became the focus of our work throughout the year. The "expert syndrome" (ES) is something we've identified in a variety of settings and that we're still trying to puzzle out. We do a lot of work based around open-ended questions where there is no one right answer.

Other times there might be a "right answer", but there are multiple ways to approach the problem. ES is a real killer in both of these settings, dampening the creativity of experts and non-experts alike.

But the main thing I remember from that day and the months that followed is how difficult it was to **just** observe. There were several times I thought that I'd have to staple my lips together to keep from jumping in with my own comments and solutions. During our debriefing, Letty and Carolyn mentioned the same sense of, "Are we doing our job if we don't guide their thinking towards 'right' answers? If we are supposed to be teaching these kids, is it ever okay to just observe as they work?"

This need to intervene, to constantly guide our students, is very strong. All three of us have stated on numerous occasions that we believe the *process* is at least as important as the *product*; that our goal is not to have every kid get the right answer every time but to have them learn how to work towards solutions. However this is all head-level learning and our gizzards still scream at us every time we watch a student following a path that will lead to a "wrong" answer.

So it was (and still is) very unnerving playing the role of observer, saying nothing as kids make "mistakes". And as teachers, we are presented with a tough dilemma when we choose to use observation as a teaching strategy. In the case presented above, I had a hard time staying in my role as observer when Debbie wrote down 45 as a counting sequence. If I had stepped back into a more traditional role, I would have missed seeing how Peter was thinking about counting sequences and how he could get his voice heard. (I used this story with the class several days later as an example of how to get your teammates to listen to you. We named it the "Put your finger on the paper" strategy.) On the other hand, I'm wondering if I did the right thing in not intervening when Carl told Chet that 4 wouldn't work. Although Carl eventually found out that 4 does work, it took Chet a long time before he again volunteered answers.

It was in working through this dilemma, attempting to negotiate a truce between the notions of teacher as observer and teacher as instructor, that a strategy I call "coaching" gradually evolved--a mixture of instruction, observation, and reflection/debriefing. The general rule is that I sit with a team of students to get things started, if only with a review of group process or problem solving strategies. Then I go into observation mode as the kids work through the day's problem. Periodically I call for a *Time Out*, pointing out something that has happened and asking them to tell me what they make of it. At the end of the session, both the students and I write some reflections about the session. The following description illustrates the power of observation when used in this way.

The problem for the day involved a checkerboard and 8 checkers. The directions were fairly simple--place the checkers on the grid in such a way that no two checkers end up on the same row, column, or diagonal. (Sounds easy, but try it sometime.)

Sally turned the paper over and the four girls read the directions in unison. When they finished, Beth sat back to observe as she often does, Sally and Christine started grabbing checkers, and Jane sat back a bit and said, "Let me think," to herself. As soon as she leaned forward they somehow decided to split up the checkers, two apiece.

Time out. "Can you tell me how you decided to split up the checkers?" The girls looked at each other for a moment before Jane answered. "Well, splitting up the checkers makes sure that everybody is a part of the work." Christine chimed in. "Yes. This way it's fair. There can't be any bosses."

I waited and when no one else had anything to add, I tried again. "I agree that it's a good idea to share the resources. We'll have to bring up that strategy to the whole class. Sharing the materials might be a good general problem solving strategy. But I'm still wondering **how** you made the decision to each take two checkers."

One of the girls said she thought the idea had come from Jane. She is the "expert" in the group, but this time it hadn't been her idea. I pushed harder and finally they remembered that Christine had first said, "Let's split them up." I informed them that no more than 10 seconds had passed from the time Christine had made the suggestion to the time they had started dividing up the checkers, and I pushed them to reconstruct what had actually happened. We talked it through long enough for them to see that they had assumed that it was okay with everyone, even though they hadn't "checked it out."

Time in. They returned to the problem. Each of the girls put her pieces on the grid. As soon as the checkers were placed, others would move them around. There was a constant chatter as they worked. "No, see, there's two on this row." "What happens if we move this one up to here?" There were moments when their hands were a blur sliding the checkers from one square to another. Often one girl would barely finish placing a piece when another would reach out to move it. I was just starting to signal for another time out to ask them about this when Sally said, "Let's start over." As she said it, she scraped the checkers off the board.

Time out. Again I asked them what had just happened and again they reconstructed what they had done. They "remembered" more quickly this time, and when I asked them how the decision was made to start over, their voices blended together, saying, "We didn't make a decision." This is where I really changed my strategy, going from "mirror" mode to "interventionist." I fed them an idea, asking, "How would it have been different if Sally had made her suggestion as a question instead of a statement and had waited to see if the rest of you agreed." They all thought that sounded like a good idea.

Time in. Again they started moving the checkers around. About this time there was some noise from the back of the room. I left for a moment to check it out, and as I returned I heard Beth ask, "Is it okay if we start over?" followed by a chorus of yeses.

Time Out The girls were brimming with excitement. Beth was especially animated and didn't wait for me to ask what had happened. "I could see that we weren't getting anywhere and I thought that it might help if we took all the checkers off and tried something different, but I remembered what had happened when Sally did that, so I asked first and waited to see what the others thought." Jane chimed in. "That felt very different. When Sally just did it I felt a little angry, and I didn't know why until just now. Beth asked first and got our permission before doing it." The girls knew they had learned something important about how groups work, something that made sense to them and that connected directly to the work they were doing.

We ran out of time at about this point, so I told them they'd have a another chance to solve the problem tomorrow. They returned to their seats and wrote in their reflection journals. Although they were still struggling with the concept of reflection, all four of them wrote about the "starting over" strategy and how asking works better than just doing it. Christine's comments were particularly on target. "We should always ask the others for permission before we do something."

Of course it doesn't always go so smoothly. After Beth's group left, I called up the next one and pretty much the same thing happened, only this time without the "happy ending" of discovery. When the girls had left, I placed the instructions upside down on the table. After the next group settled in, I reminded them about group process and problem solving strategies, especially the notion of making sure everyone knows what the problem is. Then I leaned back and waited to see what they would do. After they saw that I wasn't going to answer any questions, the three boys on the team started playing with the checkers. Stephie picked up the paper and began reading the directions to herself. About then Josh decided to split up the checkers.

Time out. I went through the same routine as with the last group, only being aware of the clock, I rushed it, not doing nearly as good a job of asking questions. When I said **Time In** Stephie read the directions out loud. Immediately Josh, Stephie and Mark started trying to put the checkers on the board, but Chet somehow waved them off, repeating the directions while pointing at the board. He read them twice before Josh got the idea and then he repeated them. **Time Out.** This time I only took a moment to give Chet some well deserved praise for trying to make sure everyone understood the problem.

Time In. What happened next was so fascinating that I got caught up in observing and forgot the other roles of coaching. Josh, who had given them each two checkers, proceeded to take them out of their hands one at a time and place them on the board without explaining what he was doing. The other three just sat and watched. They pointed out where Josh was wrong and occasionally reached out to move one, although he somehow got them to stop. My notes are a bit sketchy as to how he did that. Chet sat back watching, occasionally muttering, "No that won't work, there isn't a pattern."

I let Josh go until all the checkers were on the board. Several times I had to restrain myself from giving them a way of checking to see if two checkers were on the same diagonal. Maybe if there had been more time, I would have called a Time Out and asked them to brainstorm ways they could check. But it was the end of the day and the buses must roll. When I finally stopped them, I pointed out where there were two checkers on one diagonal, and I brought up Josh's behavior. He assumed his teammates didn't mind what he was doing because, "They didn't say anything." When I finally got him to see what had happened and asked what they could have done differently, his reply was, "Well, I guess we could have all taken a turn with all the checkers." Good strategy for problem solving, but rather missing the point. I think the others were beginning to see how Josh had decided on a strategy and gone ahead without checking with them. Unfortunately they had to leave before they could write any reflections, so I don't really know if they "got it" or not.

These two sessions, the observing on the first day of school and the coaching later in that month, have given me much to think about. The expert syndrome, problem solving strategies, decision

making models, and group process skills; each of these are areas that I need to consider as my pedagogy continues to evolve. But what strikes me as the most important lesson from all of this has to do with the power of observation.

Two years have passed since Peter figured out that counting by 45 wouldn't get the group to 100, since Beth's group "invented" the notion of "Ask for Permission." Two years and I'm still trying to figure out how to make observation and coaching a regular part of my teaching practice. The daily madness of trying to 'cover' the material, of trying to keep things going, often gets in the way. Yet every time I make a conscious effort to observe my students at work, I learn something about them, something that helps me create a better learning environment for whatever group I am working with. And I find myself thinking of my colleague Chris and her sense that observing is something that can't happen while one is teaching. I think it can happen. The question is not whether we can use this strategy in our classrooms, but how we can make it an everyday part of our practice.

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